IN THE CLAIMS:

Claim 1 (currently amended): A semiconductor device comprising:

a first semiconductor and second semiconductor substrates, both being different in lattice constant and bonded with each other,

wherein said first semiconductor substrate is ~~a GaAs~~ an InP substrate and said second semiconductor substrate is ~~an InP~~ a GaAs substrate ~~or a Si substrate~~, and

an amorphous layer made of constituent atoms of said first and second semiconductor substrates is formed at an interface between said first and second semiconductor substrates.

Claim 2 (original): The device according to claim 1, wherein one of said first and second semiconductor substrates includes a light-emitting layer.

Claim 3 (previously presented): The device according to claim 1, wherein said first semiconductor substrate is an InP substrate including a compound semiconductor layer of zero layers or one or more layers and said second semiconductor substrate is a GaAs substrate including a compound semiconductor layer of zero layers or one or more layers.

Claim 4 (canceled): The device according to claim 3, wherein said compound semiconductor layer of said first semiconductor substrate is made of $In_{1-x}Ga_xAs_yP_{1-y}$ (x and y are numbers from zero to one).

Claim 5 (canceled): The device according to claim 3, wherein a compound semiconductor layer of said second semiconductor substrate is made of $Al_xGa_{1-x}As$ (x is a number from zero to one).

Claim 6 (original): The device according to claim 1, wherein said amorphous layer has a thickness of 1 nm or more.

Claim 7 (withdrawn): A manufacturing method of a semiconductor device, said method comprising:

a first step of pressing, onto each other, surfaces of first and second semiconductor substrates different in lattice constant, so that they are bonded to each other; and

a second step of treating, with heat, said first and second semiconductor substrates bonded, so as to form an amorphous layer at an interface between said first and second semiconductor substrates.

Claim 8 (withdrawn): The method of according to claim 7, wherein said first and second semiconductor substrates are treated at a temperature of 550 ℃ or higher for one hour or longer in said second step.

Claim 9 (withdrawn): The method according to claim 7, wherein one of said first and second semiconductor substrates includes a light-emitting layer.

Claim 10 (withdrawn): The method according to claim 7, wherein said first semiconductor substrate is an InP substrate including a compound semiconductor layer of zero layers or one or more layers and said second semiconductor substrate is a GaAs substrate including a compound semiconductor layer of zero layers or one or more layer.

Claim 11 (withdrawn): The method according to claim 10, wherein a compound semiconductor layer of said first semiconductor substrate is made of $In_{1-x}Ga_xAs_yP_{1-y}$ (x and y are numbers from zero to one).

Claim 12 (withdrawn): The method according to claim 10, wherein a compound semiconductor layer of said second semiconductor substrate is made of $A1_xGa_{1-x}As$ (x is a number from zero to one).

Claim 13 (withdrawn): The method according to claim 7, wherein said amorphous layer has a thickness of 1 nm or more.

Claim 14 (currently amended): A semiconductor device comprising:

a first and second semiconductor substrates, both being different in lattice constant and bonded with each other,

~~wherein an amorphous layer made of constituent atoms of said first and second semiconductor substrates is formed at an interface between said first and second semiconductor substrates, and~~

~~said amorphous layer has a linear current-voltage characteristic.~~ wherein an interface

between said first and second semiconductor substitutes has a linear current-voltage characteristic, and an amorphous layer made of constituent atoms of said first and second semiconductor substitutes is formed at said interface.

Claim 15 (previously presented): The device according to claim 14, wherein one of said first and second semiconductor substrates includes a light-emitting layer.

Claim 16 (previously presented): The device according to claim 14, wherein said first semiconductor substrate is an InP substrate including a compound semiconductor layer of zero layers or one or more layers and said second semiconductor substrate is a GaAs substrate including a compound semiconductor layer of zero layers or one or more layers.

Claim 17 (previously presented): The device according to claim 16, wherein said compound semiconductor layer of said first semiconductor substrate is made of $In_{1-x}Ga_xAs_yP_{1-y}$ (x and y are numbers from zero to one).

Claim 18 (previously presented): The device according to claim 16, wherein said compound semiconductor layer of said second semiconductor substrate is made of $A1_xGa_{1-x}As$ (x is a number from zero to one).

Claim 19 (original): The device according to claim 14, wherein said amorphous layer has

a thickness of 1 nm or more.

Claim 20 (New): A semiconductor device comprising:

a first and second semiconductor substrates, both being different in lattice constant and bonded with each other,

wherein said first semiconductor substrate is an InP substrate and said second semiconductor substrate is a GaAs substrate, and

wherein an interface between said first and second semiconductor substrates has a linear current-voltage characteristic, and an amorphous layer made of constituent atoms of said first and second semiconductor substrates is formed at said interface.